L1B SOFTWARE READINESS AND QA DOCUMENTATION

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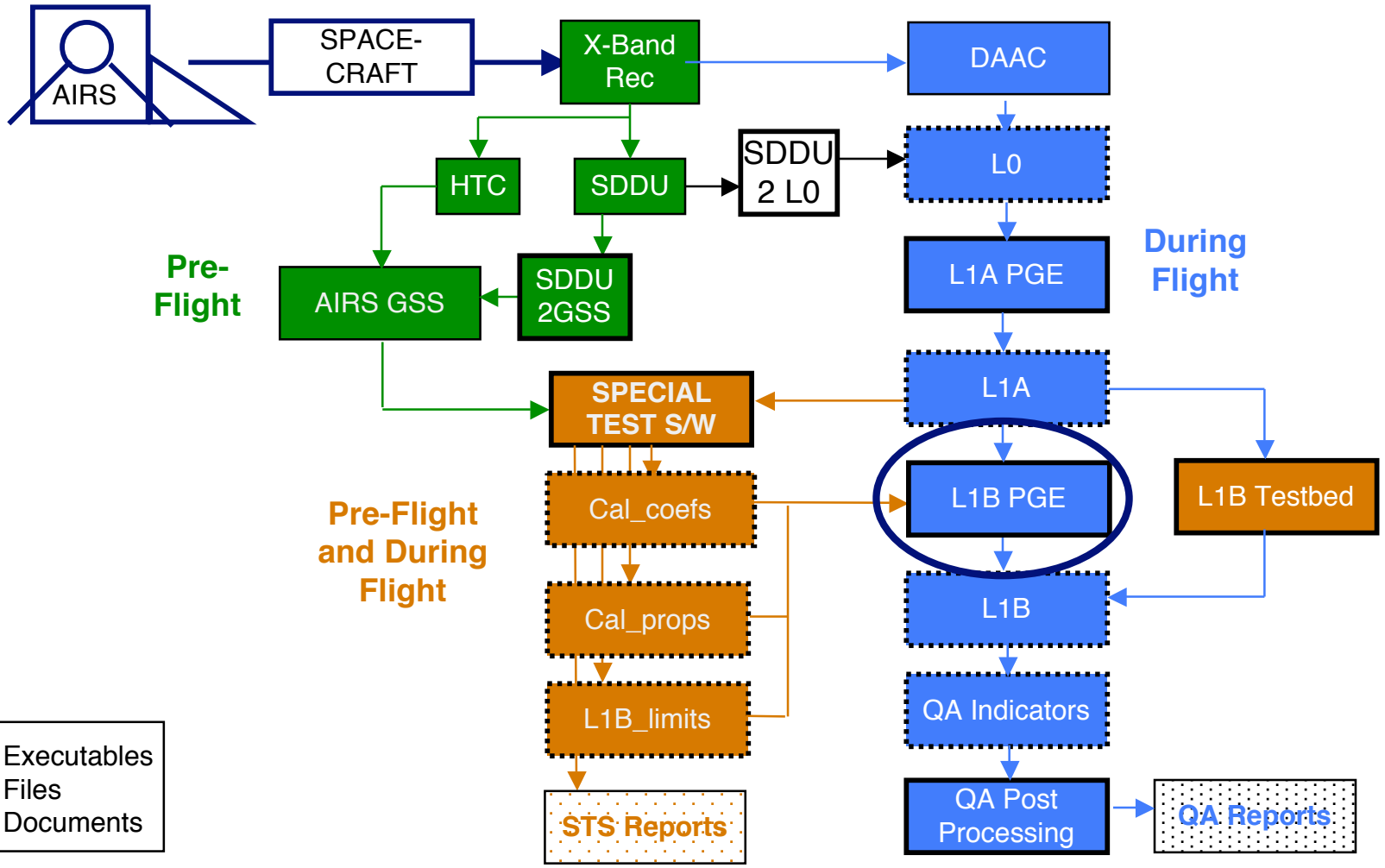
SCIENCE PROCESSING SYSTEM
AIRS LEVEL 1B INFRARED

- **Requirements identified**
  - ***Include: DN to Radiance Conversion, QA, radiometric, spectral and spatial performance and characterization data***
  - ***"Atmospheric Infrared Sounder (AIRS), Level 1B Visible, Infrared and Telemetry Algorithms and Quality Assessment (QA) Processing Requirements", Version 1.0, June 22, 2001***
- **Implementation Complete**
  - ***L1B PGE v2.2.16 and independent testbed v2.2 complete***
- **Testing in Progress**
  - ***L1B PGE validation using the testbed to be completed by end of Feb. Will show exact agreement of all tested parameters.***
  - ***Early results show excellent agreement of radiances***
  - ***Testbed radiances show excellent calibration accuracy when compared to external LABB***

See airsteam.jpl.nasa.gov/calibration

L1B VALIDATED PRE-FLIGHT AND DURING FLIGHT CHECKOUT AND OPERATIONS



CAL FLAGS ARE KEY TO IDENTIFYING VALID DATA

- **AUTOMATIC QA FIELD**
  - ***Determines overall quality of a granule based on state***
  - ***Depends on state flag which says if data are valid or invalid and identifies valid and invalid conditions of CalGranSummary***
- **CAL_FLAG FIELDS**
  - ***Provide necessary information on the calibration***
  - ***bitfield: Gains, offsets, noise events, saturation, spectral***

Summary Level	QA Name	Number Per Granule
Granule	CalGranSummary	1
Channel	CalChanSummary	N_chan
Scan	CalScanSummary	N_scan
Scans & Channels	CalFlag	N_chan x N_scans

- ***Must also monitor "state" flag per footprint for missing/bad data***

L1B MONITORING IN-FLIGHT BY ACT

- **L1B Starts flowing in FL*+70 (After Special Tests and Stabilization)**
- **QA will be tracked and debugged during this time**
  - ***Temperature limits updated***
  - ***Cal Flag limits updated***
  - ***Spectral and Radiometric algorithms checked for robustness***
  - ***DCR evaluated***
  - ***Effects of moon in space viewport evaluated***
- **Scene Radiances will be evaluated**
  - ***Correlated noise, fixed pattern or 1/f noise***
  - ***Scan Angle Dependence (Polarization Effects, Mirror contamination (if any), etc.)***
  - ***Climatologies selected for spectral calibration***
- ***FL = First Light**

L1B RELEASE SCHEDULE

Version Update Name	TLSCF	DAAC
• L1B Validated At-Launch	L+0	L+3
• L1B Coefficient Update	FL+3	FL+5
• L1B Algorithm Update	FL+5	FL+7

•FL+3 Months: First Look at Calibration Complete

- •Special Test Data Analyzed
- •Quicklook at Earth Scene for Calibration
- •Calibration Coefficients Updated at TLSCF
- •Test data set for one entire day acquired
- •Instrument reasonably stable after this point

All timelines presented assume no additional outgassing events